

Claims

1. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising the steps of
 - i) contacting a test compound with a PRKG1 polypeptide,
 - ii) detect binding of said test compound to said PRKG1 polypeptide.
- 10 2. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising the steps of
 - i) determining the activity of a PRKG1 polypeptide at a certain concentration of a test compound or in the absence of said test compound,
 - ii) determining the activity of said polypeptide at a different concentration of said test compound.
- 15 3. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising the steps of
 - i) determining the activity of a PRKG1 polypeptide at a certain concentration of a test compound,
 - ii) determining the activity of a PRKG1 polypeptide in the presence of a compound known to be a regulator of a PRKG1 polypeptide.

4. The method of any of claims 1 to 3, wherein the step of contacting is in or at the surface of a cell.
5. The method of any of claims 1 to 3, wherein the cell is in vitro.
6. The method of any of claims 1 to 3, wherein the step of contacting is in a cell-free system.
- 5 7. The method of any of claims 1 to 3, wherein the polypeptide is coupled to a detectable label.
8. The method of any of claims 1 to 3, wherein the compound is coupled to a detectable label.
9. The method of any of claims 1 to 3, wherein the test compound displaces a ligand which is first bound to the polypeptide.
- 10 10. The method of any of claims 1 to 3, wherein the polypeptide is attached to a solid support.
11. The method of any of claims 1 to 3, wherein the compound is attached to a solid support.
12. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising the steps of
- 15 i) contacting a test compound with a PRKG1 polynucleotide,
- ii) detect binding of said test compound to said PRKG1 polynucleotide.
- 20 13. The method of claim 12 wherein the nucleic acid molecule is RNA.
14. The method of claim 12 wherein the contacting step is in or at the surface of a cell.
15. The method of claim 12 wherein the contacting step is in a cell-free system.
16. The method of claim 12 wherein polynucleotide is coupled to a detectable label.
17. The method of claim 12 wherein the test compound is coupled to a detectable label.
- 25 18. A method of diagnosing a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological

diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising the steps of

- 5 i) determining the amount of a PRKG1 polynucleotide in a sample taken from said mammal,
 - ii) determining the amount of PRKG1 polynucleotide in healthy and/or diseased mammals.
19. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising a therapeutic agent which binds to a PRKG1 polypeptide.
- 15 20. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising a therapeutic agent which regulates the activity of a PRKG1 polypeptide.
- 20 21. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising a therapeutic agent which regulates the activity of a PRKG1 polypeptide, wherein said therapeutic agent is
- 25 i) a small molecule,
ii) an RNA molecule,
iii) an antisense oligonucleotide,
iv) a polypeptide,
30 v) an antibody, or
vi) a ribozyme.

22. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising a PRKG1 polynucleotide.
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23. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising a PRKG1 polypeptide.
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24. Use of regulators of a PRKG1 for the preparation of a pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal.
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25. Method for the preparation of a pharmaceutical composition useful for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal comprising the steps of
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 - i) identifying a regulator of PRKG1,
 - ii) determining whether said regulator ameliorates the symptoms of a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases in a mammal; and
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 - iii) combining of said regulator with an acceptable pharmaceutical carrier.
30. Use of a regulator of PRKG1 for the regulation of PRKG1 activity in a mammal having a disease comprised in a group of diseases consisting of cardiovascular diseases, respiratory

diseases, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, gastroenterological diseases, cancer, hematological diseases, muscle-skeleton-diseases, neurological diseases and urological diseases.